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NOTES ON THE PLANTS OF WINELAND THE GOOD.

M. L. Fernald.

The writer was recently asked for photographs, taken in eastern Canada, of the Wild Grape (*Vitis Labrusca*) and of the Wild Rice (*Zizania*) to be used as evidence that the early Norsemen had made a settlement in Nova Scotia; but he was forced to reply, that, so far as botanists are definitely informed, neither of these plants is known to be indigenous in Nova Scotia. From this simple incident it became apparent that much of the evidence that the Norsemen had landed, about the year 1000, upon the coast of Nova Scotia or of New England, is found in the statement that they discovered "Wild Rice" or "Indian Corn" and "Grapes." And, since a consideration of the plants seen upon our coast by Champlain, Rosier, and even later explorers, had already more than once lured the writer from the restricted fields of his special studies, he has been interested to look into the problem of the "Wild Rice," "Grapes," and other plants which were described by the Norsemen as abounding in Wineland the Good.

In the course of this study it has been necessary to refer to the old herbals and other early botanical writings, as well as to accounts of travels in northern lands, in order to gain an accurate conception of just what plants were familiar to the Norsemen of the 11th century, who, it should be borne in mind, were Norse who had settled in Iceland and then in Greenland, and whose chief commerce and contacts were with the home country, Norway. Without attempting in this preliminary notice to discuss many of the details of the sagas which touch upon the flora or any which bear specially upon the fauna, ethnology, and geography of the three regions of eastern America — Helluland, Markland and Vínland — defined in the sagas, it will be sufficient to give a portion of the evidence in regard to the "Grape," the "Wheat," and the "*mǫsurr*" wood; and to state that the further details which have been assembled in regard to these, as well as the bear, strange whale, Skrellings, ice-capped mountains, and other features, which define the natural and physical characteristics of these, the first regions of America to be described, will, as soon as possible, be presented in a more extended work now in preparation.

In approaching a subject, in many of its details so foreign to the ordinary field of the writer's studies, he should explain, that, in matters pertaining to the original statements of the sagas, he has depended upon the phototype reproductions of the texts and the translations published by Reeves,[1] which have been said to be, "as far as the Scandinavian sources of information are concerned, the final word." In the translation of the Scandinavian and some other passages he has had the generous assistance of Professor W. H. Schofield and in the Latin passages of Professor E. K. Rand; and in the proof-reading he has been assisted by Miss Mary A. Day, Librarian of the Gray Herbarium.

The portions of the original Icelandic texts, which have brought the Grape so prominently into the discussion of Wineland the Good, are frequent statements that the Norsemen found the "*vínber*," which grew "wherever there was hilly ground" and which, according to one version of the story, were so abundant "that their after-boat was filled with '*vínberjum*'. . . .and when spring came, they made their ship ready, and sailed away; and from its products Leif gave the land a name, and called it Wineland." "*Vínber*," literally *wine-berry*, has very naturally been accepted by students of the sagas as "Grape"; and in a work no less authoritative than the Century Dictionary do we find under BERRY, that the Old Saxon "*wīnberi* = A. S. *wīnberie*, 'wine-berry,' grape." In line with this general interpretation, Vínland has been located at various points on the coast of southern New England and Nova Scotia, near the northern limits of the range of Wild Grapes. Storm, in urging the claims of Nova Scotia, cites the finding of Wild Grapes by Cartier on the Isle of Orleans in Quebec [300 miles from the nearest point in Nova Scotia] and by the later French explorers, in 1607, on the St. John River in New Brunswick; but "on the east shore of Fundy Bay, in the environs of Port Royal (now Annapolis, Nova Scotia), the French did not, on the other hand, meet with the grape-vine growing wild; for Lescarbot affirms distinctly, that, though on the west side they found vines in abundance and ripe grapes, in the environs of Port Royal he had seen none such, though the country with its hills was well adapted for their growth. Spite of this, it would, from testimony well-nigh simultaneous, seem to be a matter of certainty, that in southern Nova Scotia the vine also at that time grew wild. We have thus an account by Sir William Alexander, in his 'Encouragement to Colonies' (1624), respecting those he had sent out, who landed, July 1623, in Luke's Bay (Port Mouton, in lat. 43° 55′) on the southeastern coast of Nova Scotia, and explored the country as far as Cape Negro. The author enumerates here the fruits of the region, and in particular 'gooseberies, strawberies, hindberies, rasberies, and a kind of red wine-beries.'" [1]

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[1] Arthur Middleton Reeves. The Finding of Wineland the Good. The History of the Icelandic Discovery of America edited and translated from the earliest Records. With Phototype Plates of the Vellum Mss. of the Sagas. London. 1890.

Storm gives, however, further evidence that a true Grape has been more recently found near Annapolis and Pictou, Nova Scotia. But outside this evidence, based not upon actual specimens preserved in public herbaria, but chiefly upon somewhat traditional statements, we are unable to find any record which can positively be associated with the Grape (*Vitis*) in Nova Scotia.[2] There are four native Grapes recognized in New England and the Maritime Provinces. One, *Vitis Labrusca*, which has given rise to many of our table grapes, occurs in thickets and upon stone-walls, etc., abundantly southward, but locally northeastward along the coast as far as the mouth of the Kennebec. *Vitis aestivalis* and *V. bicolor* are species of rocky woodlands, reaching their northeastern limits in the interior of southern New Hampshire. *Vitis vulpina* is chiefly a river-bank species, known from all the larger river-valleys of New England, but not definitely known east of the St. John valley in New Brunswick, where it is rare and found only in the interior. As indicated by these ranges and as stated above, the evidence of Wild Grapes in Nova Scotia is not wholly convincing to a botanist. In fact, Professor L. H. Bailey, in his treatment of the genus *Vitis* in North America, makes no mention of the Nova Scotia reports.[3]

Furthermore, the mention by Sir William Alexander of "red wine-beries" on the coast of Nova Scotia should not be taken as indicating that he found Grapes; for a search of botanical writings from the earliest herbals to the latest publications upon the colloquial names of plants in Scandinavia and Great Britain fails to reveal any use of either the name "*vínber*" or "Wine-berry" for the Grape. But, on the other hand, in the more northern countries of Europe at the present day, the names "*vínber*" and "Wine-berry" are still used as folk-names for some of the identical wild fruits which bore those names in the Middle Ages. The Grape, it should be kept in mind, is a fruit of southern Europe and adjacent Asia and Africa, which, when cultivated even in southern England, is ordinarily given artificial protection;[1] and in southern Norway it can be cultivated with success only south of latitude 61°, and then only when trained against a warm reflecting wall.[2]

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[1] Gustav Storm, Studies on the Vineland Voyages, 45, 46 (1889).

[2] See Macoun, Catalogue of Canadian Plants, i. 97 (1883).

[3] See L. H. Bailey in Gray, Synoptical Flora of North America, i. pt. 1, 422 (1897).

It seems highly improbable, then, that the Grape should have been familiar, at least from personal experience, to the early Norsemen who sailed from Iceland and Greenland to the western continent. And, in view of the fact that the true Grape is called in Scandinavian *vindrufva*, it is not likely that the Norsemen, if they knew this foreign fruit at all, would have applied to it the name *vínber*, when they already used the latter name for a common and very different wild fruit of Norway.

In the early days of botanical studies in northern Europe an attempt was made to identify all the plants of Germany, Holland, Scandinavia, England, and other northern regions with the plants described from the Mediterranean by Pliny, Theophrastus, and other classical writers upon Natural History. It thus happened that botanists, as late as the 17th and 18th centuries, were still identifying the Currants (*Ribes*) of northern Europe with the Corinth or Currant (*Vitis*) of southern Europe and Asia Minor. Thus, in 1633, Thomas Johnson urged that the "Red Currans," which were "found plentifully growing in many gardens," should no longer be confused with the Currant (small raisin) of the Mediterranean, saying "yet must they not be confounded with those Currans which are brought from Zant, and the continent adioyning thereto, and which are vulgarly sold by our Grocers; for they are the fruit of a small Vine [*Vitis*], and differ much from these."[1] But in 1701 the northern Currants (*Ribes*) were still known among students in Scandinavia as species of *Vitis* (the true Vine or Grape), for we find that by Rudbeck[2] *Ribes alpinum* of modern botanists was called "*Vitis, Ribes alpinus dulcis.*" The common Red Currant (the "*Vinbaer*"[3] of the Norwegians, "*Röda Vinbär*"[4] of the Swedes, and "*Wina-maria*"[5] of the Finns) was treated as *Vitis vinifera Ribes*[6] *sylvestris dicta, fructu rubro*"; and the Black Currant of our gardens ("*Svarte Vinbaer*"[7] of the Scandinavians) was called "*Vitis, Ribes sylvestris, fructu nigro olente.*" Prior[8] and Britten and Holland[9] tell us that the Red Currant is still known in the northern counties of England and of Scotland as "Wine-berry," and the Black Currant is also called in northern Scotland "Wine-berry." And as far south as Geneva, where the Red Currant was possibly introduced from the North, it retains a suggestion of its old confusion with the Grape in its colloquial name, *Raisin de mare.*[10]

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[1] See Nicholson, Dictionary of Gardening, iv. 162–170 (1887).

[2] "Um in Norwegen mit einigem Erfolg im Freien Reben zu ziehen, ist das Spalier unerlässlich. Ueber den 61sten Breitegrad hinaus dürfte aber auch diese Culturart nicht genügen, um im Freien reife Trauben zu gewinnen."

— Schübeler, Die Culturpflanzen Norwegens, 97 (1862).

The use of Currants in making wine, a common practice in New England, was also known to the Norse, Swedes, Russians, Germans, French, English, and other northern peoples. Gunnerus, writing of the Red Currant ("*Ribs* of the Danes and Norwegians, *Viinbaer* also of the Norwegians, *Red currants* of the English"), says: "The people of Christiania prepare from the fully ripe berries a substitute for wine, but from the immature berries they make a substitute for vinegar."[11] Linnaeus, travelling in Schonen (Skåne in southern Sweden), says: "Wine had been made here from the red and white Currants

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[1] Gerarde's Herball, ed. Johnson, 1593, 1594 (1633).

[2] Rudbeck, Nora Samolad, sive Laponia illustrata, et iter per Uplandiam, etc., 9 (1701), according to Linnaeus, Flora Lapponica, 64, 65 (1737).

[3] "Norvegis praeterea *Viinbaer*" — Gunnerus, Flora Norvegica, pars 1, 46 (1766).

[4] "*Raeda Winbaer.* Suecis" — Linnaeus, Flora Lapponica, 65 (1737).

[5] "*Wina-maria.* Finnonibus" — Linnaeus, Flora Lapponica, 65 (1737).

[6] The Latin generic name *Ribes* is commonly said to come from the Arabic; but, as the name of the northern currants, it probably come from the Scandinavian *ribs* and *resp.*— See de Candolle, Origine des Plantes Cultivées, 221 (1883).

[7] "Svec. *Svarte Wiinbaer.*"— Gunnerus, Flora Norvegica, pars 2, 11 (1772).

[8] Prior, Popular Names of British Plants, ed. 3, 254 (1879).

[9] Britten and Holland, Dictionary of English Plant-Names, 495 (1886).

[10] "A Genève, la Groseille [*Ribes rubrum* or its close relative *R. vulgare*] se nomme encore vulgairement *Raisin de mare*" — De Candolle, l. c. 221.

[11] "*Ribes rubrum*...Danis & Norvegis *Ribs*; Norvegis praeterea *Viinbaer*...Angl. *Red currants*...*Christianienses ex baccis plene maturis succedaneum* vini, *ex immaturis autem acetum* aceto vini *substituendum parant.*"
Gunnerus, Flora Norvegica, pars 1, 46 (1766).

(*Johannisbeeren*). If the Red Currant-wine was drunk with sugar, it was in taste almost as good as red wine, and was even stronger; moreover it did not ferment as easily." [1]

In Livonia, "Out of the berries is also made a wine pleasing to us, for, if it is well prepared, it resembles pretty much in taste red Burgundy. .... From the dregs left in the cask one can also distill a brandy, which is as good as French brandy." [2] In Germany, "One prepares from it [the Red currant] jelly, a champagne-like wine, which keeps several years, and a very good vinegar." [3] And in England, "Currant wine [from the Red Currant] is made by fermenting the juice with sugar, and is considered as one of the best 'home-made wines,' as we may gather from the nursery song of the tempting qualities of 'cherry pie and currant wine.'" [4]

Barton and Castle tell us that "the fruit of the Black Currant [*Ribes nigrum*, the '*Svarte Vinbaer*' of Scandinavians], though disagreeable to many persons in its recent state, is much used in forming a pleasant and wholesome wine, and a grateful preserve. In Russia and Siberia, a wine is made of the berries alone, or with the addition of honey; and also a distilled spirit." [5] Syme makes a similar statement, that "in Siberia....the berries being fermented with honey, a powerful spirit is distilled from them." [6] And Alphonse de Candolle states that the Black Currant is "used in the manufacture of the liqueurs known as ratafia and cassis." [7]

The other "Wine-berry" of northern Europe is quite different in appearance from the Currant, yet it was likewise confused by early botanical writers of the North with the true Grape (*Vitis*). This second "Wine-berry" is *Vaccinium Vitis-Idaea,* the little berry known in northern New England and Canada as the Rock Cranberry or Mountain Cranberry; in England and Scotland as Red Whortle-berry, Cowberry, Ling-berry, or Wine-berry; in Germany as *Preisselbeere* or *Steinbeere*; in Denmark and Norway as *Tytebaer* or *Tyteling*; and in Sweden as *Lingon.* By the herbalists, at least as late as the end of the 16th century, this plant was supposed to be a true Grape, and was identified with the *Vitis Idaea* of Pliny; but in 1597 Gerarde pointed out, that the plant to which this name had been generally applied by students of northern Europe was not the true *Vitis Idaea* of the Ancients. In Gerarde's words, "Whortle berries are called in high Dutch *Heydelbéeren*: in lowe Dutch *Crackebesien,* bicause they make a certaine cracke whilest they be broken betweene the teeth, of diuers *Hauerbesien*:. . . .and we in England Whortes, Whortle berries. . . .and in some places Winberries. . . . . Most of the shops of Germanie do call them *Myrtilli,* but properly *Myrtilli* are the fruite of the Myrtle tree, as the Apothecaries name them at this day. This plant [*Vaccinium Vitis-Idaea*] hath no name for ought we can learne, either among the Greekes or auncient Latines: for whereas most do take it to be *Vitis Idaea,* or the Corinth tree, which *Plinie* surnameth *Alexandrina,* it is vntrue; for *Vitis Idaea* is not onelie like to the common Vine, but is also a kinde of Vine. . . .This Vine which groweth neere to mount Ida, is reported to be like a shrub, with little twigs and branches of the length of a cubite, about which are grapes growing aslope, black, of the bignes of a Beane, sweete, hauing within a certaine winie substance, soft: the leafe of this is rounde, vncut and little. . . .And with this description the little shrub [*Vaccinium Vitis-Idaea*] which the Apothecaries of Germanie do call *Myrtillum,* doth nothing at al agree, as it is very manifest; for it is low, scarce a cubite high, with a few short branches not growing to a cubite in length: it doth not bring foorth clusters or bunches, nor yet fruite like vnto grapes, but berries like those of the Yew tree; not sweete, but somewhat sower and astringent, in which also there are many little white flat seedes. . . .Moreouer it is thought that this is not found in Italy, Greece, or in lesser Asia, for that *Matthiolus* affirmeth the same to grow no where but in Germanie and Bohemia, so farre is it from being called or accounted to be *Vitis Idaea,* or *Alexandrina.*" [1]

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[1] "Aus *den rothen und weissen Johannisbeeren* war hier *Wein* gepresset worden. Wenn der rothe Johannisbeeren-Wein mit Zucker getrunken ward, so gab er an Geschmack, dem rothen Weine wenig nach, und war schier stärker, kam auch nicht so leicht in Arbeit." Then follows a long account of the method of preparing the wine.— Linnaeus, Reisen durch das Königreich Schweden, 313 (1756).

[2] "Aus den Beeren wird auch ben uns ein gegohrner Wein gemacht, der, wenn er gut gerathen ist, dem rothen Burgunderwein am Geschmack ziemlich gleichkommt.... Von dem im Gefässe nachgebleibenen Hefen kann man einen Brandwein destilliren, der so gut ist, als der Franzbrandwein." — J. B. Fischer, Versuch einer Naturgeschichte von Livland, 443 (1791).

[3] "Man bereitet aus ihnen Gelée, einen dem Champagner ähnlichen Wein, welcher sich mehre Jahre hält, unt einen sehr guten Essig" — Schlechtendal, Langethal & Schenk, Flora von Deutschland, 5te Aufl. xxii. 275 (1885).

[4] Syme, English Botany, iv. 43 (1873).

[5] Barton & Castle, British Flora Medica, i. 242 (1845).

[6] Syme, English Botany, iv. 46 (1873).

[7] "Il est employé dans la fabrication des liqueurs appelées ratafia et cassis" — De Candolle, Origine des Plantes Cultivées, 222 (1883).

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[1] Gerarde, Herball, 1231 (1597).

This long but convincing extract is quoted as showing how firm had been the conviction in northern Europe previously to the time of Gerarde, that *Vaccinium Vitis-Idaea* was a true Grape. And although the name "Wine-berry" is no longer in general use for *Vaccinium Vitis-Idaea,* it was still known to the herbalists in 1633. At that time, Thomas Johnson, in a Table of English names "gathered out of antient written and printed Copies, and from the mouthes of plaine and simple country people," recorded the statement that "*Wyneberry is* Vaccinia." [1] And it is worthy of note that the learned Charles Pickering identified the "kind of red wine-beries," seen on the coast of Nova Scotia in 1623 as *Vaccinium Vitis-Idaea.*[2] In none of the modern Scandinavian floras is the writer able to find the name *Vinbaer* used for *Vaccinium Vitis-Idaea,* and it is possible that the name was used only in England and Scotland; but in many different regions in the North,— Norway, Sweden, Denmark, Germany, Switzerland, Siberia, etc.— wine, brandy or other alcoholic beverages were formerly prepared from the berries. Thus, Gunnerus, in his Flora of Norway, enumerating the uses of *Vaccinium Vitis-Idaea,* states on the authority of Johan Paulli, that "wine also can be made from the berries." [3] Liljeblad states that in Sweden "wine can be made from the berries." [4] In Denmark, likewise, "they make from the berries a sparkling drink, and a good brandy"; [5] and Gmelin, in his Flora of Baden tells us, that "the berries, especially in the northern regions, in Sweden and Russia, are preserved in various ways. . . . They likewise are ingredients in various beverages, various kinds of the drink called *Punch.* In Siberia, from the fermentation of the berries, mashed with a decoction of bruised rye, a pleasing sour drink, slightly inebriating, is produced. Our mountain people at Kaltbrunn [in Switzerland] distill from the mashed and fermented berries a pleasing spirit, strong and very limpid, which they sell under the name *Steinbeeren-Geist* or *Steinbeeren-Wasser.*" [6] Similarly, in the region of the Black Forest in Baden,

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[1] Gerarde, Herball, ed. Johnson, Suppl. (1633).

[2] Chas. Pickering, Chronological History of Plants, 940 (1879).

[3] "Vinum *etiam ex baccis confici potest.*"— Paulli, Dansk oeconomisk urte-bog, 151 (1761), according to Gunnerus.

[4] "af båren kan tillagas vin" — Liljeblad, Svensk Flora, 139 (1792).

[5] "Der laves og en kislende Drik af Baerrene, og en god Braendeviin."
Hornemann, Forsøg til en dansk ockonomisk Plantelaere, 533 (1796).

[6] "Baccae praesertim in regionibus borealibus, in Suecia et Russia vario modo condiuntur. . . . Sic etiam in varia potulenta, varia sic dicti *Punsch* genera ingrediuntur.

In Siberia ex fermentatione baccarum contusarum cum decocto Secalis comminuti, "they prepare from them also by fermentation an esteemed spirit, known under the name of *Steinbeeren-Wasser*." [1]

From the facts here stated it is apparent, that there is no ground for supposing that the "*vínber*" of the early Norsemen was the true Grape; but that the name "*vínber*" long has been and still is the colloquial name for the Currant in both Norway and Sweden, and its equivalent, "Wine-berry," is still used for Currants in northern England and Scotland. Furthermore, the name "Wine-berry" was still in use at the last of the 16th and the first of the 17th centuries for the Mountain Cranberry (*Vaccinium Vitis-Idaea*), though the name in that sense soon disappeared from botanical writings. Currants and Rock or Mountain Cranberries were both confused by the most learned early botanical writers of northern Europe with the true Grape (*Vitis*) of southern Europe, and were generally supposed to be varieties or species of the Grape, because from both Currants and Mountain Cranberries the Norse as well as many other northern peoples made wine. Without question, then, the "*vínber*" of the early Norse was either the Red or Black Currant or the Mountain Cranberry; but before entering further upon that problem or discussing the fruits, on the Atlantic coast of North America, which the early Norsemen would have identified with their own familiar "*vínber*" and which they gathered to take back to Greenland, we may well attempt to determine some of the other plants mentioned by them, and especially to find what in Norway and Iceland they knew as "*hveiti*" (wheat) and as "*mǫsurr*" wood.

The "self-sown wheat" was long interpreted as Indian Corn, but in recent years the theory advanced by Schübeler [2] has been generally adopted, that the Wheat ("*hveiti*") seen by the Norsemen in Vínland was the American Wild Rice (*Zizania*). Following this interpretation Reeves remarks: "there can be little doubt that this 'self-sown wheat' was wild rice. The habit of this plant, its growth in low ground as here described, and the head, which has a certain resemblance to that of cultivated small grain, especially oats, seem clearly to confirm this

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potus gratus acidus, leviter inebrians producitur.— Georgi, Reisen, t. i. p. 208.

Monticolae nostrates auf dem *Kaltenbrunn* ex baccis contusis fermentatis spiritum gratum fortem limpidissimum destillant, quem sub nomine *Steinbeeren-Geist, Steinbeeren-Wasser* vendunt."— Gmelin, Flora Badensis, ii. 151 (1806).

[1] "Dans le Schwarzwald...on en prépare aussi par fermentation une eau-de-vie estimée, connue sous le nom de Steinbeeren-Wasser."
Kirschleger, Flore d'Alsace i. 388 (1852).

[2] Schübeler in Forhandlinger i Videnskabsselskabet i Christiania 1858, 21–30 (1859).

view. The explorers probably had very slight acquaintance with cultivated grain, and might on this account more readily confuse this wild rice with wheat. There is not, however, the slightest foundation for the theory, that this 'wild wheat' was Indian corn, a view which has been advanced by certain writers. Indian corn was a grain entirely unknown to the explorers, and they could not by any possibility have confused it with wheat, even if they had found this corn growing wild, a conjecture for which there is absolutely no support whatever." [1]

No one who is familiar with Indian Corn and with Wheat will question the conclusion, that they are not likely to be mistaken for each other; but, until reading the above note, we should have supposed, also, that there was no possibility of anyone confusing Wheat and Wild Rice. Wheat is a narrow-leaved, comparatively low grass, with a subcylindric or finger-shaped close spike of grains (either with or without long awns or "beard") and it is cultivated in fields or dryish meadows; but Wild Rice (which, by the way, is confined to North America and therefore, like Indian Corn, "was a grain entirely unknown to the explorers") is one or our largest grasses, ordinarily three to eight feet high, with leaves an inch or more wide, and with the flowers and grains in a loose open panicle 12 to 16 inches long and 2 to 6 inches in diameter. Furthermore, Wild Rice (*Zizania*) is an aquatic plant, growing in the margins of lakes and quiet streams, especially in the region of the Great Lakes and the upper Mississippi; and, though it occurs locally in a few New England rivers, it attains its easternmost known limit in the lower reaches of the St. John in New Brunswick, being apparently unknown in Nova Scotia.

Although to a botanist there seems as little ground for assuming that the Wheat ("*hveiti*") of the sagas was Wild Rice as there is for identifying it with Indian Corn, there are, among the more than two hundred indigenous grasses which are found near the coast from New England northward, ten [2] or more species which, in superficial aspect, are closely similar to the true Wheat (*Triticum vulgare*). Of these ten or more native grasses the species of *Agropyron* demand brief discussion, for by many authors they are united with *Triticum*, the true Wheat; and in modern works upon the Norwegian and Icelandic floras they bear the name *Hvede.* Thus *Agropyron* (or *Triticum*) *caninum* is called *Hunde Hvede,*[1] *Hundahveiti,*[2] and *Kjarrhveiti;*[3] and *Agropyron* (or *Triticum*) *violaceum* is called *Bláhveiti.*[4] These names, however, *Hunde Hvede* and *Hundahveiti* (Dog Wheat), *Kjarrhveiti* (Cur Wheat), and *Bláhveiti* (Blue Wheat) are evident translations of the botanical names, *Triticum caninum* and *T. violaceum*; and, like many such names in American botanical writings, suggest too strongly a book-origin. None of the northern species of *Agropyron* (or *Triticum*), furthermore, furnish useful grains; and, with the exception of the well known garden-weed, Witch-grass or Quick-grass (*Agropyron repens*), they are ordinarily overlooked by any one but the technical botanist.

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[1] Reeves, The Finding of Wineland the Good, 174 (1890).

[2] *Agropyron* (or *Triticum*) *caninum*, *A.* (or *T.*) *pungens*, *A.* (or *T.*) *tenerum*, and *A.* (or *T.*) *violaceum*, *Elymus arenarius*, *E. canadensis*, *E. mollis*, and *E. virginicus*, *Hordeum jubatum*, and *Ammophila arenaria*.

Besides the true Wheat (*Triticum vulgare*), and its immediate allies, the wild species of *Agropyron* (or *Triticum*) which in technical writings of northern botanists are called species of wheat, there is one grass which, in Norway and Iceland, is known by the common people as Wheat. This is *Elymus arenarius,* the most conspicuous grass of the sea-strands, which has almost innumerable folk-names, among them *Strandhvede*[5] (Strand Wheat), *Sandhavre*[6] (Sand Oat), *Hvedegraes*[6] (Wheat-grass), *Havgraes*[6] (Oat-grass), *Vild Hvede*[6] (Wild Wheat), *Melr*[7], *Melgras*[7] (Meal-grass), *Melur*[8] and *Sandmelgras*[9] (Sand Meal-grass). Magnus Stephensen, as translated by the eminent British botanist, Sir William Jackson Hooker, tells us that it was the plant depended upon by the Icelanders, in the 18th century, for their flour. Stephensen, describing the tremendous volcanic eruption, which occurred in 1783 in the district of Iceland called Vester-Skaptefield's Syssel, says: "The loss sustained in this district by the destruction of the ground which used to produce the Sea Lyme-grass (*Elymus arenarius*) is the more deeply felt, since this plant has become an article of consequence among the inhabitants. The flour it yields is considered to be finer in quality and more nutritive than any which is imported; so that, although the drying and preparing of the grain are but imperfectly understood in this district, it was nevertheless in so general use, that little or no other corn[1] was bought at the trading towns."[2]

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[1] Blyt, Norges Flora, 164 (1861).

[2] Hjaltalín, Íslenzk Grasafraedi, 114 (1830).

[3] Stefán Stefánsson, Flóra Íslands, 48 (1901).

[4] Stefán Stefánsson, Flóra Íslands, 47 (1901).

[5] Gunnerus, Flora Norvegica, pars 1, 73 (1766).

[6] Hornemann, Forsøg til en dansk oekonomisk Plantelaere, 642 (1796).

[7] Grønlund, Islands Flora, 122 (1881).

[8] Stefán Stefánsson, Flóra Íslands, 46 (1901).

[9] Hjaltalín, Íslenzk Grasafraedi, 113 (1830).

Schübeler, quoting from Olafsen and Povelsen, gives more details of the use in Iceland in recent times of *Elymus arenarius* (*Strandhvede, Sandhavre, Vild Hvede, Melr*, etc.) as a substitute for Wheat, and traces its use back as far as the first of the 11th century. His account is so illuminating that it may here be quoted in full.

"In Iceland, in case of famine, people have often used the seeds of the Strand Oat [*Elymus arenarius*] as a substitute for wheat; indeed, not rarely have they even preserved life with this alone. The ears are dried on iron plates over the fire, after which the seeds are easily beaten out. One must be satisfied, however, if one secure a ton of wheat (of 139 liters) from a quantity of ears for the transport of which 40 horses are required.

"In Skaptafells Syssel on the south coast of Iceland the Strand Oat even now finds very common use as a substitute for Grain. After the seeds have been beaten out, the straw is, of course, used for the roofs of houses. Apparently in Iceland, even in the year 1000 or in the beginning of the 11th century, the Strand Oat was used as a substitute for grain. We read, for example, that near Hitaraa (in Myrasyssel on the west coast of Iceland, 64° 40′ north latitude) there is an island from which much profit is derived both from the catching of seals and the gathering of sea-birds' eggs; grass and grain ('*saedi*') also grow here [Bjórn Hitdölakappe's Saga, p. 22]. Directly after this, we are told, that the house-servants voyaged to the island, in order to stack the grain. Naturally, neither barley nor any other common kind of grain can be meant here. The learned Icelander, *Gudbrand Vigfusson* gives in his Icelandic-English Dictionary the word '*melr*,' which occurs here, as '*a kind of wild Oats esp. Bent-grass*' (compare *Agrostis*)[3] and remarks, that by this [Bent-grass] is meant *Arundo arenaria* L. Since, however, the Sand Reed [*Arundo arenaria* = *Ammophila arenaria*] occurs but rarely in Iceland,[4] while, on the other hand, *Elymus arenarius* is pretty common on the coast, and here and there even in great quantity, it seems to me obvious, that it must unquestionably be the seeds of this grass, which in ancient times as still at the present day have been used as a substitute for grain. Everyone, who knows the seeds of these two species, will readily concede, that it would occur to nobody to use the seeds of *Arundo arenaria* as a substitute for wheat, and least of all if he has the choice between this and *Elymus arenarius*." [1]

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[1] "Corn," i. e. *corn* of the English, or Wheat.

[2] Magnus Stephensen, Kort Beskrivelse over den nye Vulcans Ildsprudning i Vester-Skaptefield's Syssel paa Island i aaret, 1783 — translated by W. J. Hooker, Journal of a Tour in Iceland, ed. 2, ii. 226 (1813).

[3] Schübeler here inserts the parenthetical "*Agrostis*" not because it bears specially upon the discussion but because, at least in English speaking countries, the species of *Agrostis* are commonly called "Bent-grass."

[4] It is doubtful if *Arundo* (or *Ammophila*) *arenaria* occurs at all in Iceland. It is not recorded from there either in Grønlund's *Íslands Flora* (1881) or in Stefán Stefánsson's *Flora Íslands* (1901).

When we consider the facts: that, in the neighborhood of Reykjavík in Iceland, "all attempts, that have been made in the most sheltered parts of the place to cultivate firs and other hardy trees, have universally failed, as have those which have been made for the cultivation of corn [wheat]"; [2] that the Icelanders in the 11th century had a wild grain which they took great pains to harvest, and at the present time are largely dependent upon the seeds of the wild *Elymus arenarius* which many prefer to the imported Wheat; and that this grass bears in Iceland or Scandinavia such folk-names as Wild Wheat, Strand Wheat, Wheat-grass, Sand Oat, "*Melr*," and Meal-grass, while the other grass (*Arundo arenaria*) which has been suggested (by Vigfusson) as the Iceland '*melr*' apparently does not grow in Iceland at all,[1] but in Norway and Sweden bears the names *Sand-Roir* (Sand Reed) and Margräs (Sea Grass); there can be no question that the "*hveiti*" of the early Norsemen was *Elymus arenarius.*

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[1] "Auf Island hat man bei Hungersnoth mehrmals den Samen des Strandhafers als Kornsurrogat benutzt; ja nicht selten soll man sogar allein hiermit das Leben erhalten haben. Die Aehren werden auf Eisenplatten über Feuer getrocknet, wonach der Same sich leicht ausklopfen lässt. Man muss sich aber zufrieden stellen, wenn man eine Tonne Korn (à 139 Liter) von einer Quantität Aehren erzielt, zu deren Transport 40 Pferde erforderlich sind [Eggert Olafsen's og Bjarne Povelsen's Reise].

In Skaptafells Syssel an der Südküste Islands findet der Strandhafer noch jetzt sehr allgemaine Anwendung als Getreidesurrogat. Nachdem die Samen ausgedroschen, bedient man sich natürlich des Strohes zum Decken der Häuser. Wahrscheinlich hat man auf Island schon ums Jahr 1000 oder im Anfange des 11$^{\text{ten}}$ Jahrhunderts den Strandhafer als Getreidesurrogat angewandt. Es heisst nämlich: Bei Hitaraa (in Myrasyssel an der Wesküste Islands, 64° 40′ N. B.) liegt eine Insel, die sowohl durch Seehundefangst wie durch Einsammeln von Seevögeleiern sehr einbringend ist; auch Gras und Korn (‚*saedi*') wächst hier' [Bjórn Hitdölakappe's Saga. pag. 22]. Gleich darauf heisst es, dass die Dienerschaft des Hauses hinaus auf die Insel reiste, um das Getreide in Haufen zu bringen. Natürlich kann hiermit weder Gerste noch eine andere allgemeine Getreideart gemeint sein. Der galehrte Isländer Gudbrand Vigfusson giebt in seinem isländischen Wörterbuche das Wort '*melr*,' welches hier vorkommt, wieder mit, ‚*a kind of wild Oats esp. Bent-grass*' (ɔ: Agrostis), und bemerkt, dass damit Arundo arenaria, L. gemeint sei. Da jedoch das Sandrohr auf Island nur selten, während dahingegen Elymus arenarius ziemlich allgemein an der Küste, und hier und da sogar in Menge, vorkommt, scheint es mir einleuchtend, dass es der Samen eben dieses Grases sein muss, dessen man sich sowohl im Alterthume wie noch heutigen Tages als Getreidesurrogat bedient hat. Jeder, der die Samen dieser beiden Arten kennt, wird gewiss einräumen, dass es Niemanden einfallen möchte die kleinen Samen der Arundo arenaria als Kornsurrogat zu gebrauchen, und am wenigsten wenn man die Wahl hat zwischen dieser und Elymus arenarius." — Schübeler, Die Pflanzenwelt Norwegens (Allgemeiner Theil) 119, 120 (1873).

[2] W. J. Hooker, Tour in Iceland, ed. 2, i. 34 (1813).

The "*mǫsurr*" wood mentioned in the sagas has generally been accepted as some species of Maple, and this interpretation prevails in the notable series of citations given in the Century Dictionary under MAZER. Yet, as stated by Reeves, "it has also been suggested that the word mausurr, *mǫsurr*, may be allied to the modern Swedish Masbjörk, veined-birch, German, Maser-birke, and again [cf. Grönl. hist. Mindesm. vol. i. p. 280] to the German Meussdorn, a view which Angrim Jonsson was the first to advance. .... That the tree called *mǫsurr* was also indigenous in Norway is in a manner confirmed by a passage in the Short Story of Helgi Thorisson [Þáttr Helga Þórissonar], contained in Flatey Book [vol. i, p. 359]: 'One summer these brothers engaged in a trading voyage to Finmark in the north, having butter and pork to sell to the Finns. They had a successful trading expedition, and returned when the summer was far-spent, and came by day to a cape called Vimund. There were very excellent woods here. They went ashore, and obtained some '*mǫsurr*' wood.' The character of this narrative, and the locality assigned to the '*mǫsurr*' trees, affects the trustworthiness of the information. It is reasonably clear, however, that the wood was rare and, whether it grew in Finmark or not, it was evidently highly prized." [2]

The statement that "the locality [northward toward Finmark] assigned to the '*mǫsurr*' trees" in the Story of Helgi Thorisson "affect[s] the trustworthiness of the information," indicates Reeves's belief that the "*mǫsurr*" trees were Maple. It is certainly true that the Maple of Norway (*Acer platanoides*) is confined to the southern half of the country[3]; but Birch trees, according to the distinguished Norwegian botanist, Blytt, occur as far north as Finmark,[4] so that they could readily have been seen by Helgi and his companions on their return southward from that region.

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[1] Though included by Hjaltalín in his *Íslenzk Grasafraedi* (1830), the Sand Reed (*Arundo* or *Ammophila arenaria*) is not recognized as an Iceland plant by either Grønlund (1881) or Stefán Stefánsson (1901).

[2] Reeves, l. c. 170.

[3] See Blytt, Norges Flora, ii. 1087 (1876); also Nyman, Conspectus Florae Europaeae 135 (1878).

[4] See Blytt, Norges Flora, i. 402, 403 (1861).

When we turn to the writings of Scandinavian botanists, we find the name *mösurr* or *masur* applied only to the Birch. Thus the immortal Linnaeus, writing in 1737 of the Birch trees of Lapland, says: "*Knobs, tuffs, protuberances* or prominences are often put forth in old birches from the middle of the trunk, which are firmer than the rest of the wood, since they consist of fibres twisted and entwined (*Masurlupne*). From these they [the Laplanders] make their small vessels for foods and drink, generally carved into a roundish form, with only a quarter part removed above, and with a handle affixed." [1] Later, in his *Flora Suecica*, Linnaeus speaks of one of the forms of *Betula* as *Masurbiörk*.[2] More recently, Areschoug in his *Skånes Flora* tells us that *Betula verrucosa* [*pendula*] is called *Masurbjörk*.[3] In Livonia "The bunches on the lower part of the trunk of the Birch we call *Birken-masern*." [4] Other northern botanists tell us of the *Masur*-birch, but the fullest discussion, apparently, is that given in the *Pflanzenwelt Norwegens* by Schübeler, who, after discussing other modifications and uses of the Birch, says: "We find very often, likewise, the Maser-formation (old Norse: *mösurr*, Swedish: *masur*), which, so far as I have observed, appears in two different forms, either as *Maser-knobs* or even in such a manner that practically the whole wood-mass of the trunk consists, for a length of several feet, of a peculiar distorted and as it were curled formation of the annual rings. Although this formation is not conspicuously noticeable upon the outside of the trunk, yet everyone who has once carefully observed such a tree, can detect the same easily among hundreds by the peculiar knotty, crackled bark. The *Maser-knobs* are apt to have a more or less well marked hemispherical form, and may reach a diameter of 1–2 feet (31–62 cm.). These seem to arise ordinarily as a result of the massing together (perhaps produced through outward injury) of neighboring buds; which, not reaching perfect development and consequently retarding and later checking the normal formation of the annual rings, take on the form of extremely peculiar wave-like curlings. The *Maser-knobs* were in olden times used here in Norway for bowls and other vessels for drink."[1] In support of the latter statement Schübeler quotes from the saga of Harald Haardraade an account of the use of a "*Mösurbolli*" in the year 1086.

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[1] "*Tubera, tophi, tubercula* seu prominentiae saepe exseruntur in antiquus Betulis ex medio caudice, quae tenaciora sunt reliquo ligno, cum fibris constent intortis & implicatis (Marsurlupne). Ex hisce conficiunt vascula sua pro ferculis & potu, communiter in formam subglobosam excauata, demta vnica quarta parte superius, cum adfixo manubrio."— Linnaeus, Flora Lapponica, 264 (1737).

[2] Linnaeus, Flora Suecica, 283 (1745).

[3] Areschoug, Skånes Flora, 143 (1866).

[4] J. B. Fischer, Versuch einer Naturgeschichte von Livland, 623 (1791).

Without quoting further botanical writings, all of which indicate that the name *Mösurr* or *Masur* has long been applied by the Norwegians and Swedes to a peculiar knob-like outgrowth which occurs upon the trunks of birch trees and from which bowls have been cut, we may conclude that, while similar outgrowths are sometimes found upon the Maple, Horse Chestnut, Cherry, and Aspen,[2] and have sometimes been put to similar use, there is little question that the "*mǫsurr*" wood best known to the early Norsemen was a peculiar knob-like formation upon the Birch, which was rare and very highly prized.

Having now determined with reasonable certainty the plants which were known to the early Norsemen as "*vínber*," "*hveiti*," and "*mǫsurr*" wood, we may appropriately inquire what plants, upon the eastern coast of North America, the Northmen might have seen, which they would identify with those familiar and economically important plants of Norway, Iceland, or Greenland.

In northern Europe there are at least three Currants which bear the name Wine-berry (*Vínber* or *Vínbär*): *Ribes rubrum* and the closely similar *R. vulgare* (*Vínbaer* or *Röda Vínbär*) and *R. nigrum* (*Svarte Vínbär*). Upon the coast of eastern America we have two Red Currants and two Black Currants. The Red Currant of our coast which most closely resembles the European *Ribes rubrum* and *R. vulgare* (the shrubs commonly cultivated as Red Currants) is *Ribes triste*, a species so similar to *R. rubrum* that in American botanical writings it passed under that name until 1907, when its technical differences were admitted[1] by our botanists. This species, *Ribes triste*, occurs across subarctic America, and in the East extends southward along the coast to the vicinity of Eastport in easternmost Maine; [2] though among the mountains of the interior it is found southward as far as Mt. Greylock in western Massachusetts. The only other indigenous Red Currant of eastern America is *Ribes prostratum*, which differs from *R. rubrum* of Scandinavia and its American representative, *R. triste*, in having bristly instead of smooth berries and in an unmistakable and very powerful odor and flavor which have suggested for it the colloquial name "Skunk Currant." This species, the fruit of which, though unattractive to the average New Englander, is eaten with relish by the less sophisticated woodsmen of French Canada, abounds on rocky slopes and barrens in the northern part of the continent; and in the coastal region is known from Ungava Bay and Hopedale, Labrador, to southern Maine, reaching perhaps its southernmost coastal stations on the islands off Kennebunkport, where it was remarked by Champlain [3] in 1605 and where it still abounds. In the interior it follows southward among the mountains to Mts. Watatic and Wachusett in Massachusetts and the Taconic Mts. of northwestern Connecticut.

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[1] "Sehr häufig kommt auch die Maserbildung (alt. Norwegisch: *mösurr*, Schwed.: *masur*) vor, welche, so viel ich beobachtet, in zwei verschiedenen arten auftritt, entweder als Maserknoten, oder auch so, dass ziemlich die ganze Holzmasse des Stammes in einer Länge von mehreren Fuss, aus einer eigenthümlich verdrehten und gleichsam gekräuselten Bildung der Jahresringe besteht. Obgleich diese Bildung sich auf der Oberfläche des Stammes nicht auffallend bemerkbar,macht, kam doch ein Jeder, der einmal einen solchen Baum aufmerksam betrachtet hat, denselben leicht an der eigenthümlich knotig geborstenen Rinde unter Hunderten herausfinden. Die Maserknoten haben gern eine mehr oder weniger ausgeprägte Halbkugelform, und können einen Durchmesser von 1–2′ (31–62 cm.) erreichen. Dieselben scheinen gewöhnlich infolge einer, vielleicht durch äussere Beschädigung hervorgebrachten, Anhäufung von Nebenknospen zu entstehen, welche nicht zu vollkommener Ausbildung gelangend, und dadurch die regelmässige Bildung von Jahresringen hindern und letztere zwingen, die Form höchst eigenthümlicher wellenförmigen Windungen anzunehmen. Die Maserknoten wurden in älteren Zeiten hier in Norwegen zu Bollen, und andern Trinkgefässen benutzt."— Schübeler, Die Pflanzenwelt Norwegens (Allgemeiner Theil), 181, 182 (1873).

[2] "In dem heisigen botanischen Garten habe ich vor mehreren Jahren an 1–3^{cm} dicken Stämmen von Acer platanoides, Aesculus Hippocastanum, Prunus Cerasus and hauptsächlich an Populus tremula vollständige Maserbildungen in einer Länge von ¼–1 Meter beobachtet" — Schübeler, l. c. 182.

Of the two Black Currants of eastern America, one, *Ribes lacustre*, with bristly fruit, is found from the east coast of Labrador across the subarctic country to the mouth of the Mackenzie, and southward along the coast to the Cranberry Isles, off Mt. Desert, Maine, and doubtless to Penobscot Bay. In the interior of New England, however, it extends southward in cold upland woods and swamps to the mountains of northwestern Connecticut. The other Black Currant (*Ribes americanum*, often called *R. floridum*) is comparatively rare along the coast, but delights in the rich alluvium of streams, chiefly in the warm interior regions, growing from the St. John valley in New Brunswick to Assinaboia, south to Virginia, Nebraska, and adjacent regions.

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[1] See Fernald, RHODORA, ix. 1–3 (1907).

[2] Since the range of *Ribes triste* was worked out in 1907 and again for the 7th edition of Gray's Manual, limiting its northern range with Newfoundland, the writer has examined material, kindly loaned him by Dr. J. M. Macoun of the Geological Survey of Canada, from latitude 56° on the Labrador Peninsula, and has received characteristic specimens, collected at Eskimo Point on the southern coast of the Labrador Peninsula by Dr. C. W. Townsend. The southernmost coastal station yet known for this species is at Pembroke, Maine.

[3] "En ces isles y a tant de groiselles rouges que l'on ne voit autre chose en la pluspart, & vn nombre infini de tourtes [pigeons de passage], dont nous en prismes bonne quantité. Ce port aux isles est par la hauteur de 43. degrez 25. minutes de latitude." — *Les Voyages de Champlain* (ed. Laverdière), ed. 2, iii. 56. In May, 1895, Mr. Warren H. Manning and the present writer visited the islands off Cape Porpoise, Kennebunkport, to make as complete a canvass as possible of the flora, and found *Ribes prostratum* in profusion on Trott's Island.

The remaining Wine-berry of northern Europe, the Red Whortleberry of the English (*Vaccinium Vitis-Idaea*) is represented in Greenland only by the dwarfer arctic variety *minus* (var. *pumilum* Hornem.);[1] and this plant (var. *minus*) [2] is the common Red Whortleberry or Rock or Mountain Cranberry (*Pomme de terre* of the French Canadian),[3] which abounds from northern Labrador and the subarctic barrens of America southward on non-calcareous rocks to Newfoundland and the Gulf of St. Lawrence, and around the coast of Nova Scotia and southern New Brunswick to the islands of Penobscot Bay in Maine. South of Penobscot Bay *Vaccinium Vitis-Idaea* (var. *minus*) is very local indeed and it reaches its extreme southern limit at Danvers, Essex County, Massachusetts, where two very small isolated patches have been found,[4] the only ones known to the writer south of Penobscot Bay and the adjacent islands and the mountains of New Hampshire.

In determining the exact species of "*vínber*" which was gathered by the Norsemen in Vínland, we have a clue in the statement of the *Groenlandinga Þáttr* (in the Flatey Book), that "their after-boat was filled with '*vínberjum.*' A cargo [of wood] sufficient for the ship was cut, and when the spring came, they made their ship ready and sailed away." The inclination of some students has been to discredit the accuracy of this saga on the ground, that it would be impossible to gather "*vínber*" in the spring. Storm thus states with unequivocal emphasis his own ground for doubt, for to him the statement "evinces a remarkable want of knowledge concerning wine and grapes. These grapes are discovered in winter, nay even in spring (!). . . . . the grapes are gathered, too, in the spring (!) and the ship's boat filled with them(!)"[1] It is certainly true that, if the Grape alone or even the Currants come into consideration, such an account should be discredited. But, as those who are intimate with conditions in Labrador, on the North Shore of the St. Lawrence or in the subarctic region of America, will inform us, *spring is the very season of the year when the fruit of Vaccinium Vitis-Idaea* (Mountain or Rock Cranberry, Red Whortleberry, WINEBERRY of the Middle Ages) *is in its prime.* Thus, Sir John Richardson, crossing subarctic America in his search for traces of Sir John Franklin, writes: "*Vaccinium Vitis-Idaea,* cow-berry, or alpine cranberry is the. . . .cranberry most plentiful and most used throughout Rupert's Land. . . .and though inferior to the *V. oxycoccus* [the bog Cranberry of the North] in flavor in autumn, is far superior to it after the frosts; and, as it may be gathered in abundance in a most juicy condition when the snow melts in June, it is then a great resource to the Dog-ribs and Hare Indians, as well as to the immense flocks of water-fowl that are migrating to their breeding places at that date." [2] Dr. A. P. Low, Director of the Geological Survey of Canada, says: "*Vaccinium Vitis-Idaea,* Linn. (Cranberry, Pomme de terre) is the most important berry of the northern half of Labrador. South of latitude 51°, it is found only on the summits of barren rocky hills [In ancient Vínland, the "*vínber*" was found "wherever there was hilly ground"], or on barren islands in the larger lakes; but to the northward, as the open barren spaces increase, it soon becomes abundant, and about the Hamilton and Big rivers is very plentiful everywhere. . . . Owing to the lasting qualities of the fruit and its improvement by frost, large quantities are gathered annually by the inhabitants, before the ground is covered with snow, for use during the long winter, throughout which the berries keep perfectly, and counteract the ill effects of the constant meat diet of the Indians and other inhabitants. The fruit is found in perfection, immediately after the disappearance of the snow in the spring, and continues good for several weeks, until the juices are dried up by the sun." [3] Again, Professor John Macoun, Naturalist of the Dominion of Canada, adds his evidence: "*V. Vitis-Idaea,* Linn. Cowberry. Mountain Cranberry. Very abundant from the Atlantic to the Pacific, producing enormous quantities of fruit, which are invaluable as a spring food for birds on their return from the south." [4]

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[1] "Forma primaria in Groenlandia nondum observata est." — Lange, Conspectus Florae Groenlandicae, Pars 2, 268 (1887).

[2] See Fernald, RHODORA, iv. 231–234 (1902).

[3] Among the French of Quebec and Labrador the potato is commonly called *patate*.

[4] See John Robinson, Flora of Essex County, Massachusetts, 71 (1880).

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[1] Gustav Storm, Studies on the Vineland Voyages, 19 (1889).

[2] Richardson, Arctic Searching Expedition, 432 (1852).

[3] Low, Report on Explorations in the Labrador Peninsula, in Geological Survey of Canada, Annual Report, n. s. viii. 39 L. (1897).

[4] Macoun, Catalogue of Canadian Plants, i. 293 (1884).

Considering these facts, it is most probable that the "*vínber*" of the sagas was *Vaccinium Vitis-Idaea,* which bears in its specific name a token of its long confusion by early botanists of northern Europe with the Grape, and which, at least as late as 1633, bore the folk-name "Wyneberry." Whether or not the claims of this particular Wineberry and of the Currant (which in modern times alone bears the name *Vínbaer* in Scandinavia) are now finally settled, their known distribution is so similar as to have no material influence upon the main geographic problem.

A very similar distribution is shown when we study the occurrence of the Strand Wheat (*Elymus arenarius*), which has been used as Wheat by the Icelanders since the discovery of their island. It occurs in the northern regions of Europe, including Iceland, in southern Greenland and up the west coast to latitude 70°, 47′;[1] and from eastern Baffin Land southward along the coast in great abundance to the Gulf of St. Lawrence, locally to Penobscot Bay, Maine, and very locally indeed south of Penobscot Bay, reaching its extreme southern limit on the Isles of Shoals (off Kittery and Portsmouth). The Strand Wheat, although not mentioned in recent discussions of Vínland, was, it is worthy of note, identified in 1749 as the "self-sown wheat" of the sagas. Peter Kalm, the Scandinavian traveler and explorer, writing in September, 1749, from Cap aux Oyes on the north shore of the St. Lawrence (west of Murray Bay), said: "The **Sand-wheat** (*Elymus arenarius*) was likewise abundant on the strands. Both of these [*Elymus arenarius* and the Sand Reed, *Arundo arenaria*] were called by the French **Seigle de Mer**. And, since I was assured, that both of these were to be found abundantly in Newfoundland as well as elsewhere along the sea-coast in northern America, and that the places, where these grow, look from a distance like fields of grain; we may by this be able to explain what in the old Norse sagas is said of **Wineland the Good**, namely, that even there self-sown wheat-fields had been found."[2] Thus Kalm gives his distinguished support to the present interpretation and antedates it by more than 160 years.

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[1] See Ostenfeld, Flora Arctica, i. 134 (1902).

[2] "Der **Sandweizen** (*Elymus arenarius*) war gleichfalls an den Ufern häufig. Beide diese [*Elymus arenarius* und das Sandrohr, *Arundo arenaria*] wurden von den Franzosen **Seigle de Mer** genannt. Und da man mir versicherte, dass beide diese in Menge sowohl ben Terre neuve als anderswo gegen den Strand des Merres im nördlichen Amerika befindlich wären, und die Oerter, wo diese wachsen, von weiten als Getraideäcker aussehen: so dürfte man hiedurch ausdeuten können, was in den alten Nordischen Geschichtbüchern von **Winland der goda** gesagt wird, nehmlich, dass man daselbst von selbsten gesäete Weizenäcker gefunden hätte" — Peter Kalm, Reise nach dem nördlichen Amerika, iii. 515, 516 (1764).

It now remains only to determine our representative of the Scandinavian White Birch (*Betula alba*). This is obviously the Canoe Birch, which by some is thought to be inseparable as a species from the Scandinavian *Betula alba*, but by others is separated as a variety, or even as a species (*B. papyrifera*). The Canoe Birch is common in the Maritime Provinces of Canada and in the northern and upland regions of New England; but south of Essex County, Massachusetts, where it is local, it is almost unknown as a coastal species, though scattered colonies of it are found as far south as Long Island Sound. Northward, however, it crosses the interior of Labrador and follows up the coast, except on exposed mountains, headlands, and the outer islands, to the region of Hebron in latitude 58°.[1] "About Hamilton Inlet, birch is common, and, at the head of the inlet, trees up to 10 inches in diameter are not uncommon." [2]

Thus it will be seen, that the three plants which have been most depended upon in attempts to locate Wineland the Good,— "*vínber*," "*hveiti*," and "*mǫsurr*" wood — instead of being the Grape, the Indian Corn or Wild Rice, and the Maple (some of which species, by their known distribution, exclude from consideration [3] all coastal regions north of the Maritime Provinces) [4] are in reality the Mountain Cranberry or possibly one of the native Currants ("*vínber*"), the Strand Wheat ("*hveiti*") and the Canoe Birch (*mǫsurr*). And, although the Canoe Birch extends very locally southward on the coast to Long Island Sound, the Mountain Cranberry to Essex County, Massachusetts, and the Strand Wheat to the Isles of Shoals, the area of their greatest abundance is from the Lower St. Lawrence river northward along the coast of Labrador. The inevitable conclusion from these facts and its far-reaching significance must be obvious.

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[1] See Low, Report on Explorations in the Labrador Peninsula, in Geological Survey of Canada, Annual Report n. s. viii. 30, 31 L (1897).

[2] Low, l. c. 32 L (1897).

[3] As an illustration of the use of the vegetation in locating Vínland, the following, from Professor E. N. Horsford's "*The Landfall of Leif Erikson*," p. 19 (1892), may be quoted: "*In Labrador* Indian corn does not ripen; it cannot, of course, grow *wild*. Why? *Unripe seeds do not germinate*. . . . . Grapes *grow wild* in southeastern New England. Grapes *do not grow* in Labrador. The first point, then, so far as vegetation is concerned, is that Labrador *could not have been* the Vineland.

"The second point is, that what is now southeastern New England *might have been* the Vineland of the Northmen, so far as the *forests and grapes and corn* are concerned."

[4] Though Grapes, Wild Rice, and Indian Corn do not grow so far north, several species of Maple extend northward to southern Newfoundland and the Gaspé Peninsula, at the mouth of the St. Lawrence; and one, the Mountain Maple (*Acer spicatum*) reaches the southern coast of the Labrador Peninsula.

One of the greatest obstacles to those, who have depended upon the assumed translation of the critical words, "*vínber,*" "*hveiti,*" and "*mǫsurr*" as Grape, Indian Corn or Wild Rice, and Maple, has been the reconciliation of the comparatively southern range of these plants with the accounts of the natives of Vínland. These people, the "Skrellings" "were small ('swarthy' in one version) men, and ill-looking, and the hair of their heads was ugly. They had great eyes, and were broad of cheek," and they came in "skin-canoes." Nearly all students of the sagas have agreed that these *seem to be* Esquimaux; but, in order to make the natives of Vínland, the "Skrellings," fit the geographic distribution of the Grape, many arguments, not at all convincing, have been put forward to prove, either that the Esquimaux formerly came to the coasts south of the St. Lawrence, or that, after all, the "Skrellings" were really Indians. Without entering now upon that question, which would lead us far from the subject of the present paper, it may be stated: that the mass of evidence which the writer has in hand, and which will soon be ready for publication, makes it clear that, if we read the sagas in the light of what we know of the abundant occurrence north of the St. Lawrence of the "*vínber*" (*Vaccinium Vitis-Idaea* or possibly *Ribes triste, R. prostratum,* or *R. lacustre*), "*hveiti*" (*Elymus arenarius*) and "*mǫsurr*" (*Betula alba,* i. e. *B. papyrifera* of many botanists), the discrepancies in geography, ethnology, and zoölogy, which have been so troublesome in the past, will disappear; other features, usually considered obscure, will become luminous; and the older and less distorted sagas, at least in their main incidents, will become vivid records of actual geographic exploration.

Gray Herbarium, Harvard University.

THE EXTENSION OF SOME RANGES IN EASTERN MASSACHUSETTS.

K. M. Wiegand.

In the April 1909 number of Rhodora there was published a list of rare plants found in the vicinity of Wellesley, Mass., in 1907 and 1908. During the past summer the survey of the Wellesley flora has been continued with the result that the following localities were found